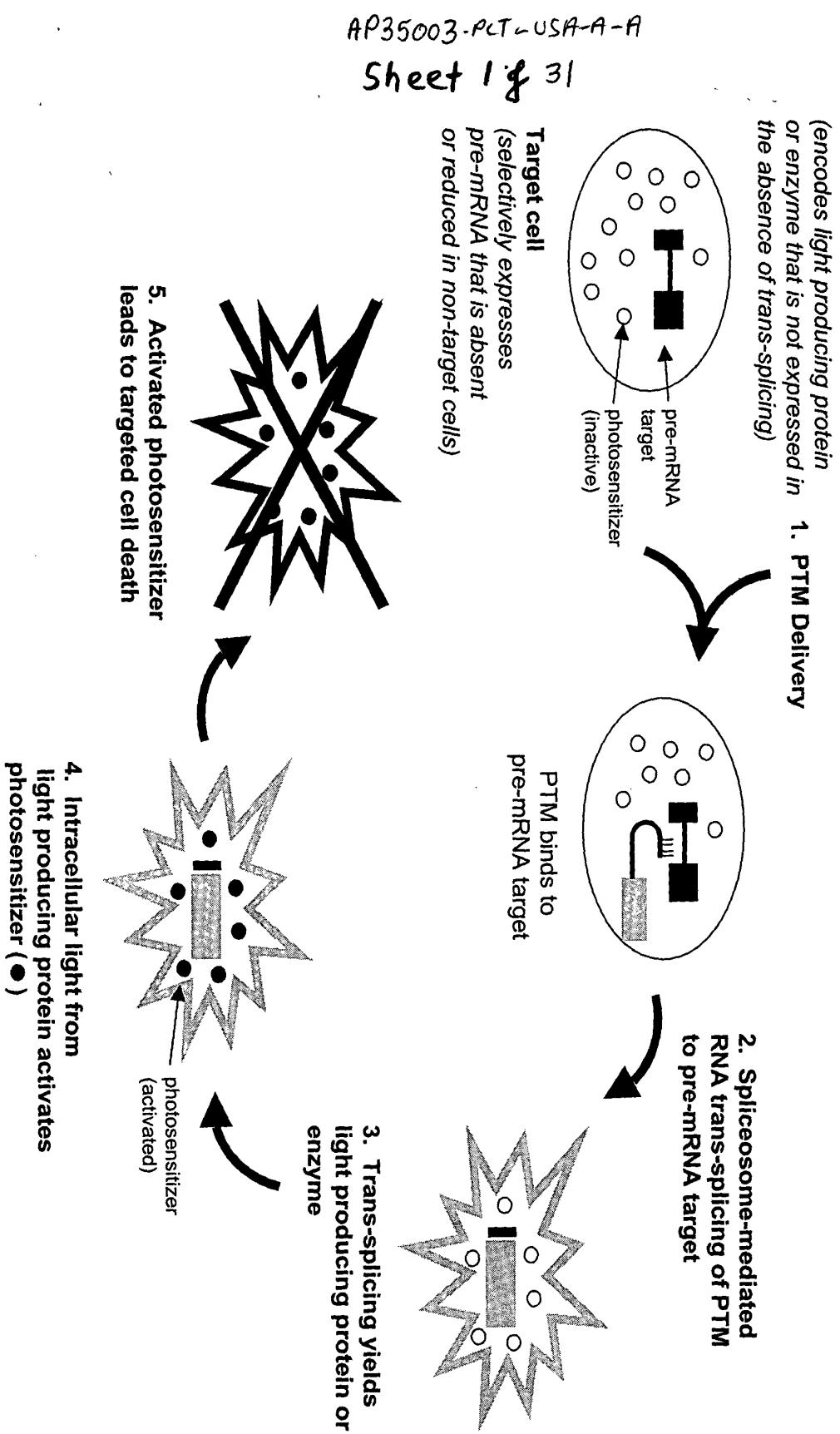


Figure 1A



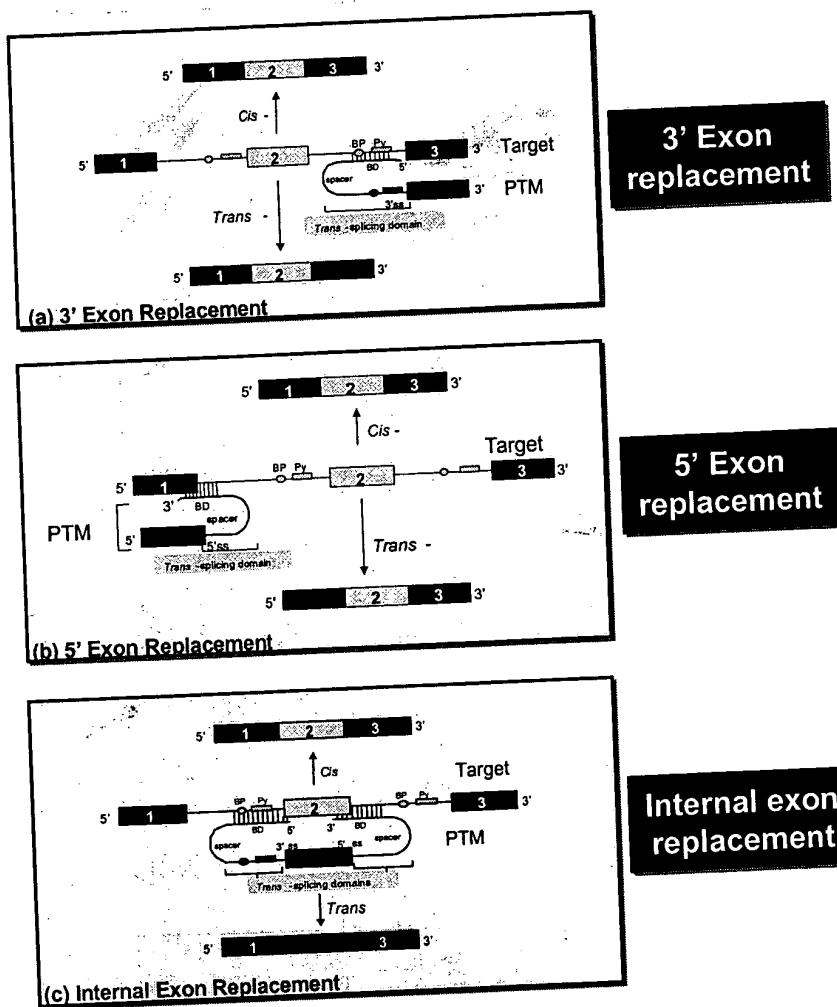


Figure 1B

A35003
(Sheet 3 of 31)

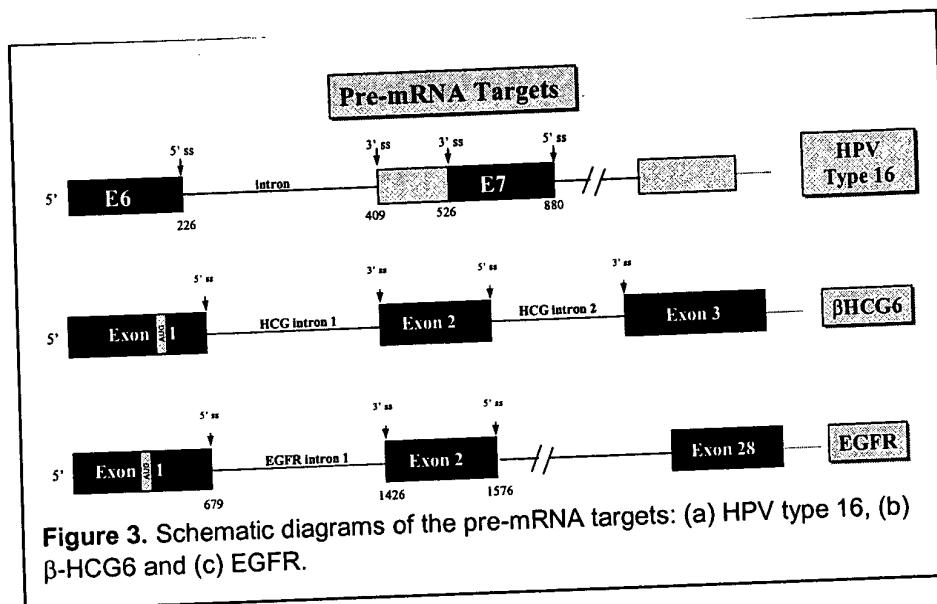


Figure 2

P35003
(shut 4 of 31)

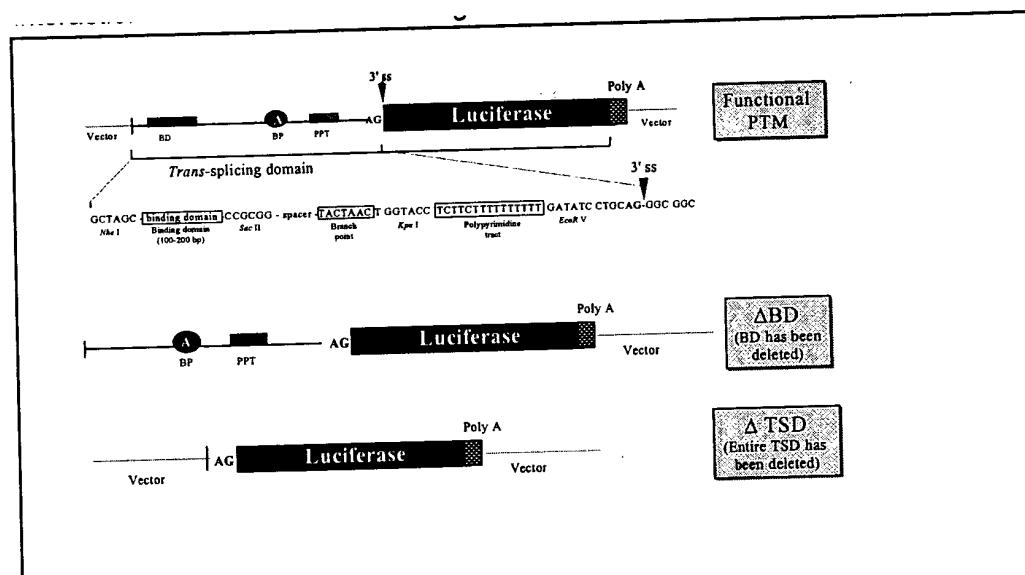


Figure 3

A35003
(sheet 5 of 31)

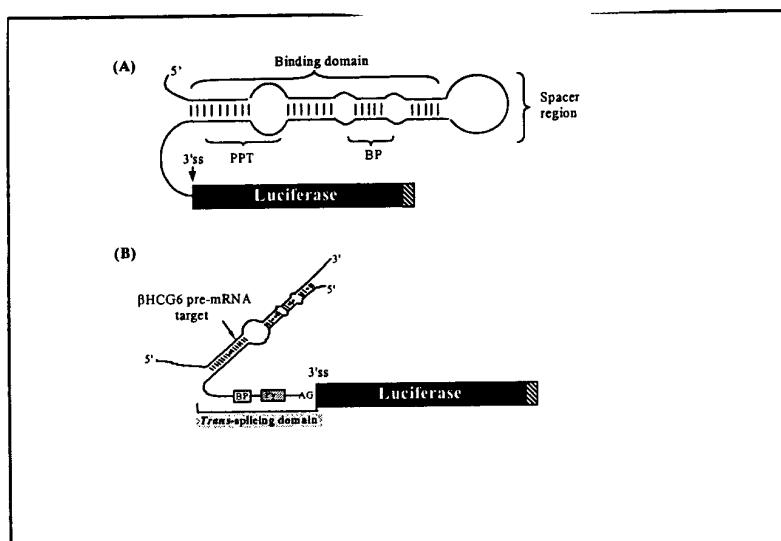


Figure 4

R35003
 (sheet 6 of 31)

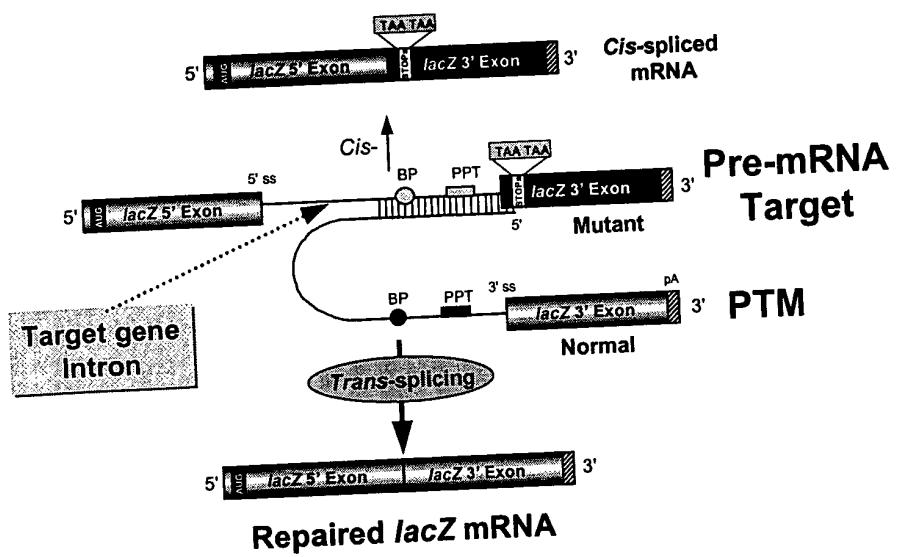


Figure 5A

Restoration of β -Gal Function

In situ staining for β -Gal activity following co-transfection
in 293T cells (unselected)

P35003
(Sheet 7 of 31)

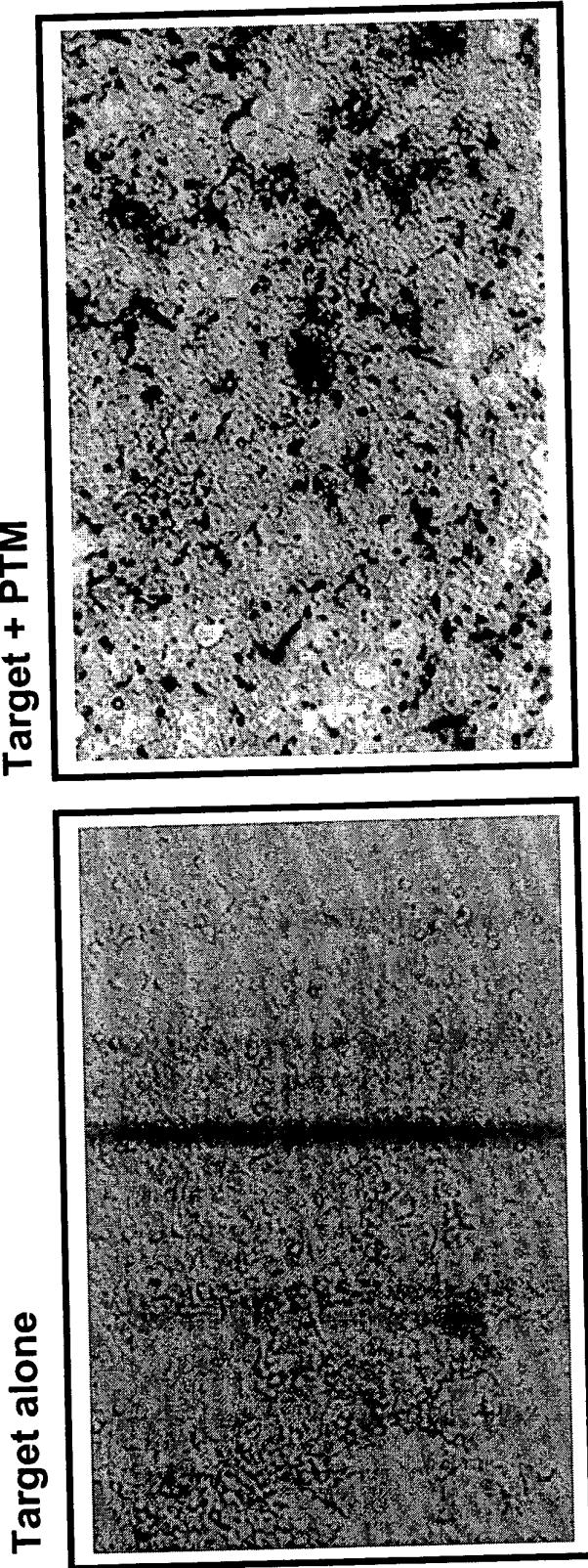


Figure 5B

P35003
(Sheet 8 of 31)

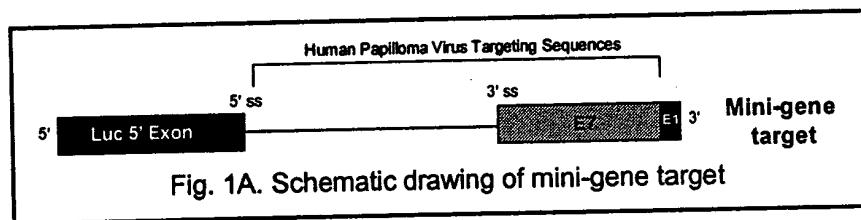


Figure b

A35003
(Sheet 9 of 31)

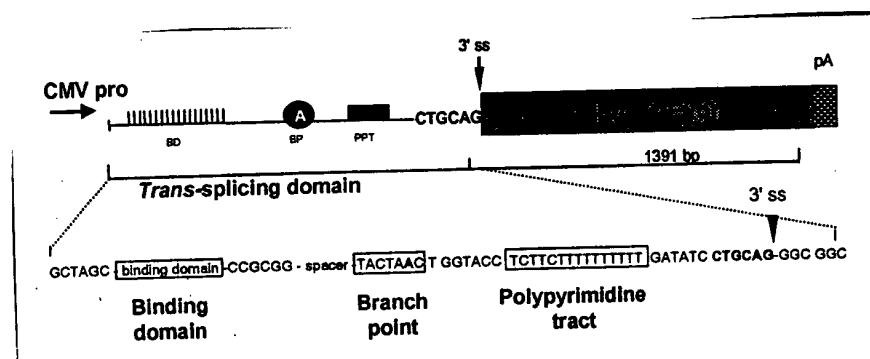


Figure 7

P35003
(Sheet 10 of 31)

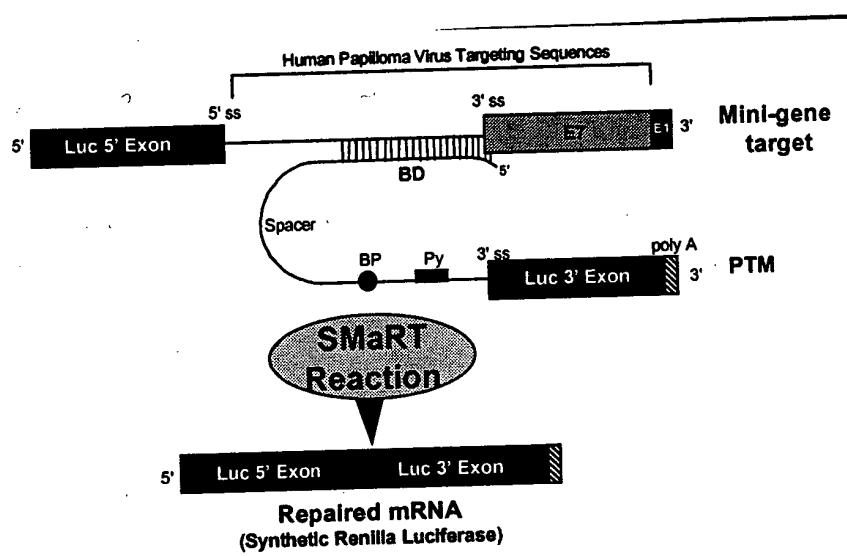


Figure 8

A35003
(sheet 11 of 31)

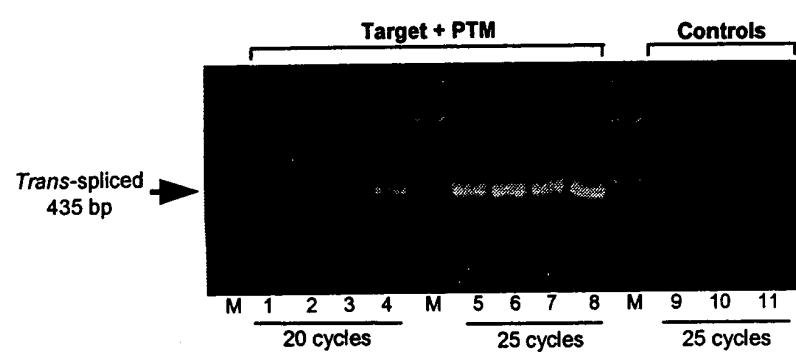


Figure 9

A35003
(Sheet 12 of 31)

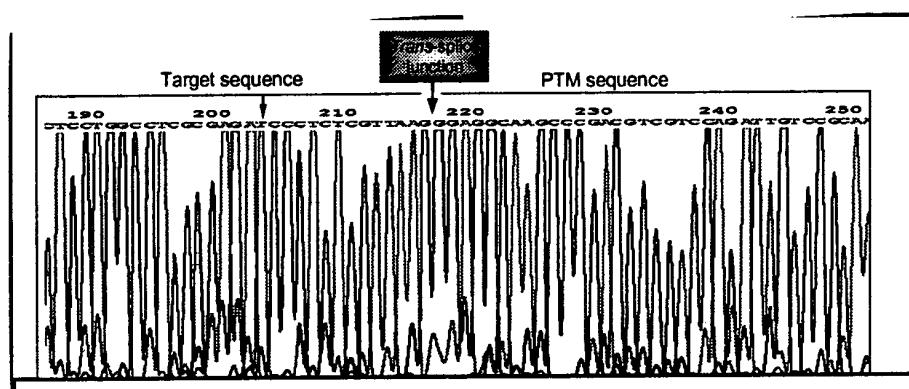


Figure 10

A35003
(Sheet 13 of 31)

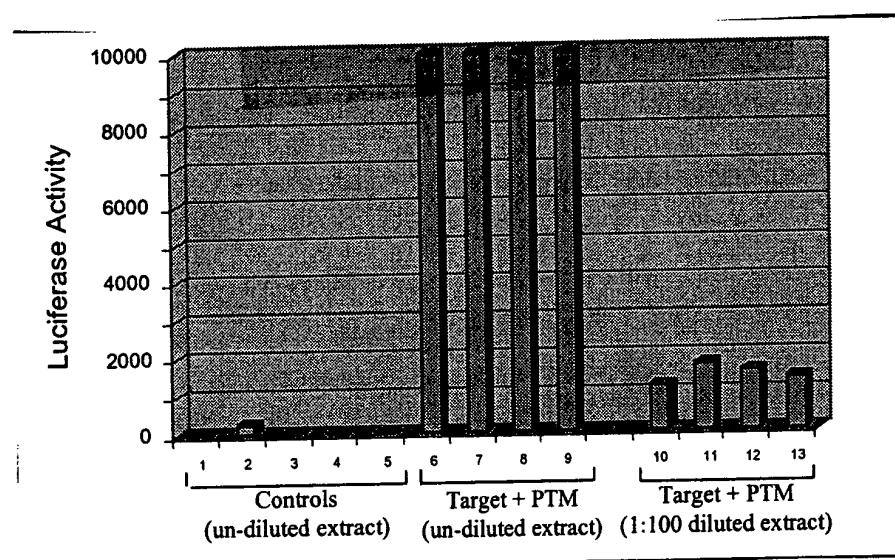


Figure 11

Schematic drawings of Luc-PTM13, Luc-PTM14 and the splice mutant used for the study

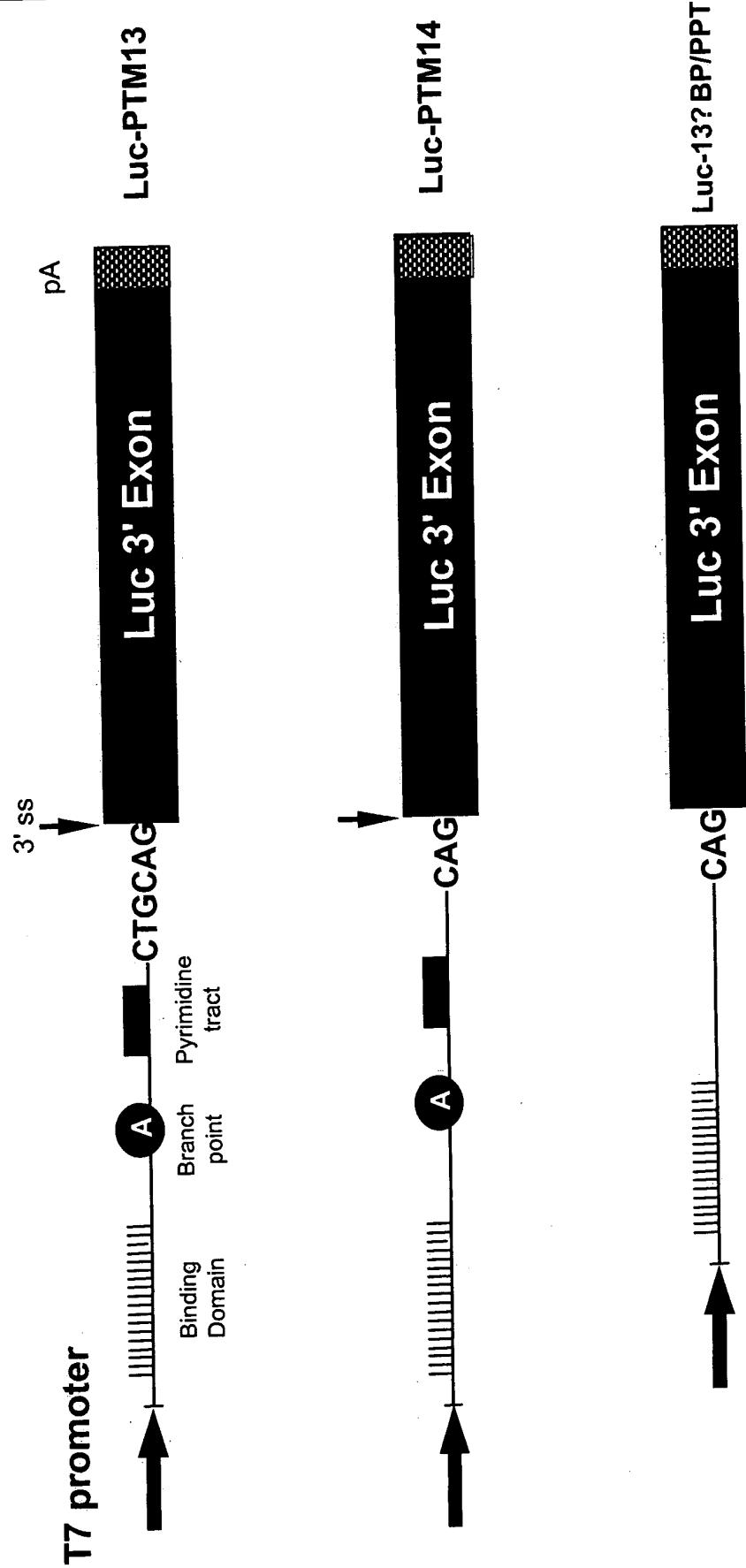


Fig. 12

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Repair of Human Papilloma Virus Target pre-mRNA
in HEK 293T Cells (Synthetic PTMs)

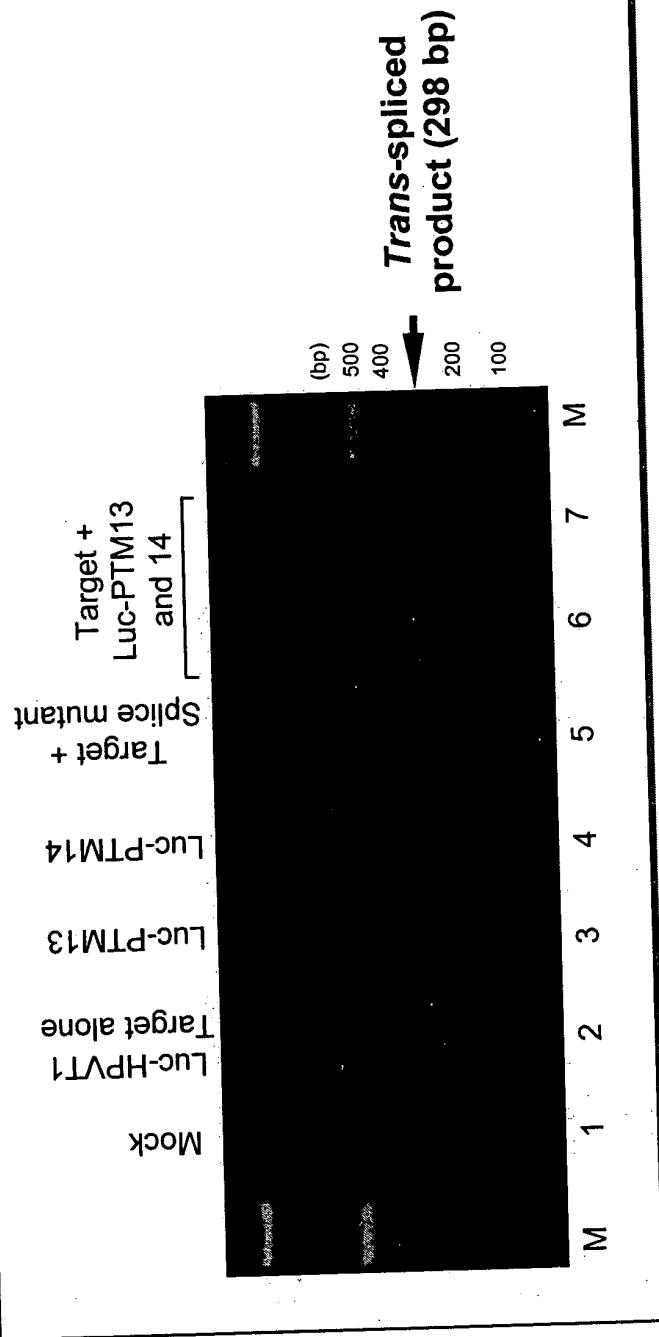
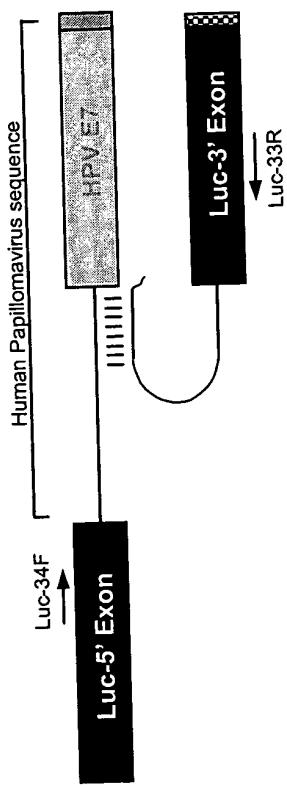


Fig. 13

Repair of Human Papilloma Virus Target pre-mRNA
Restoration of Luciferase Function in HEK 293T Cells (Synthetic PTMs)

Split Luciferase Model

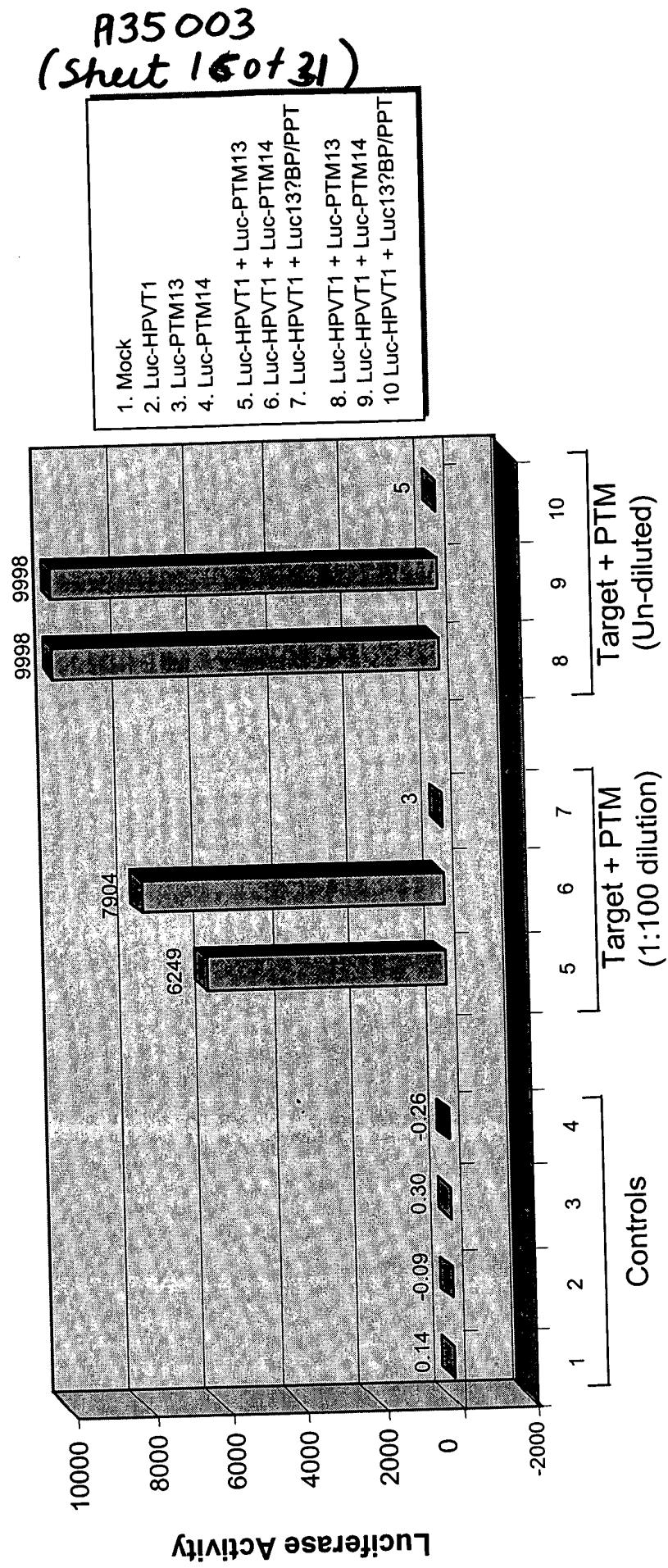


Fig. 14

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Schematic of Luciferase pre-trans-splicing molecules (PTMs)

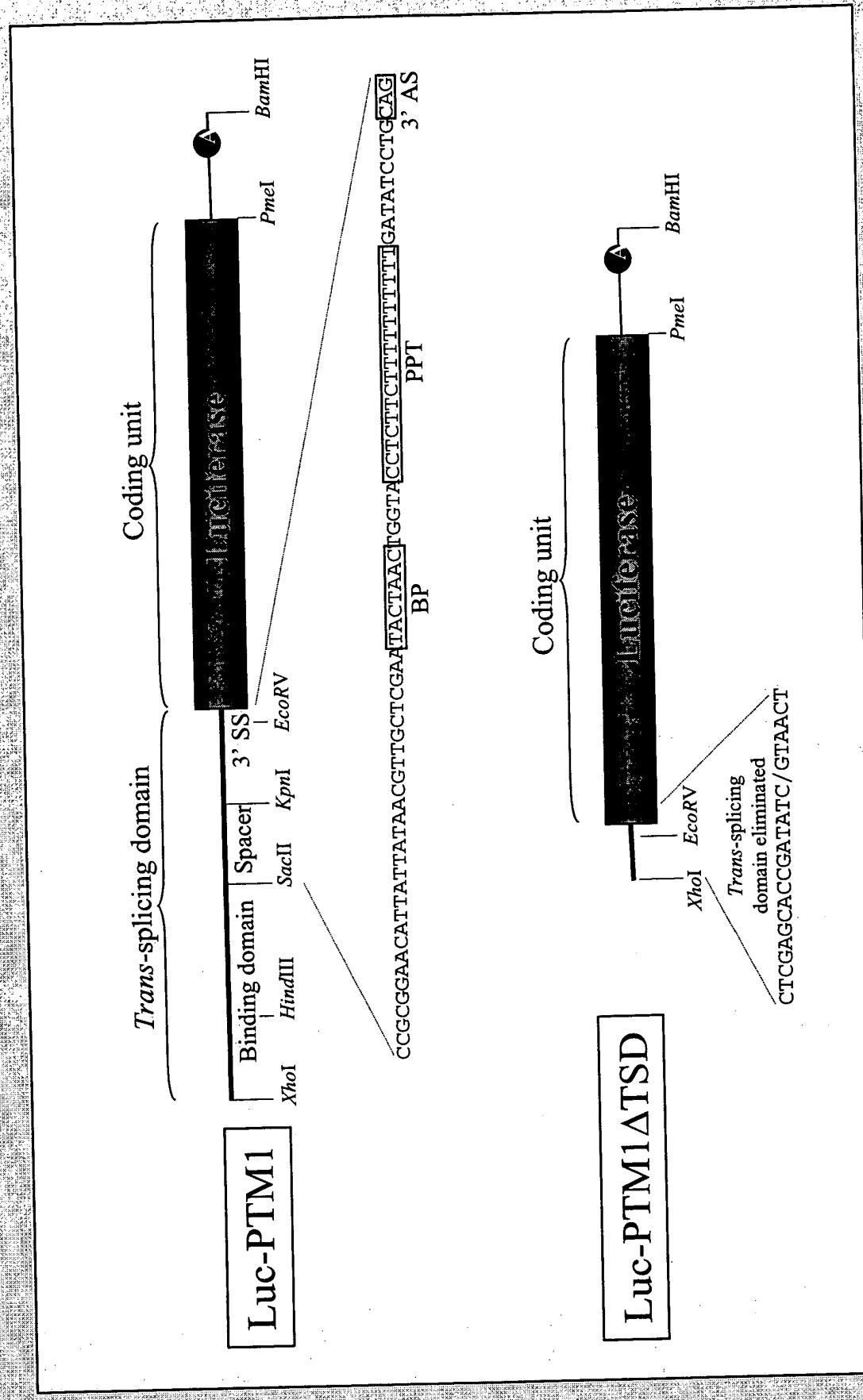
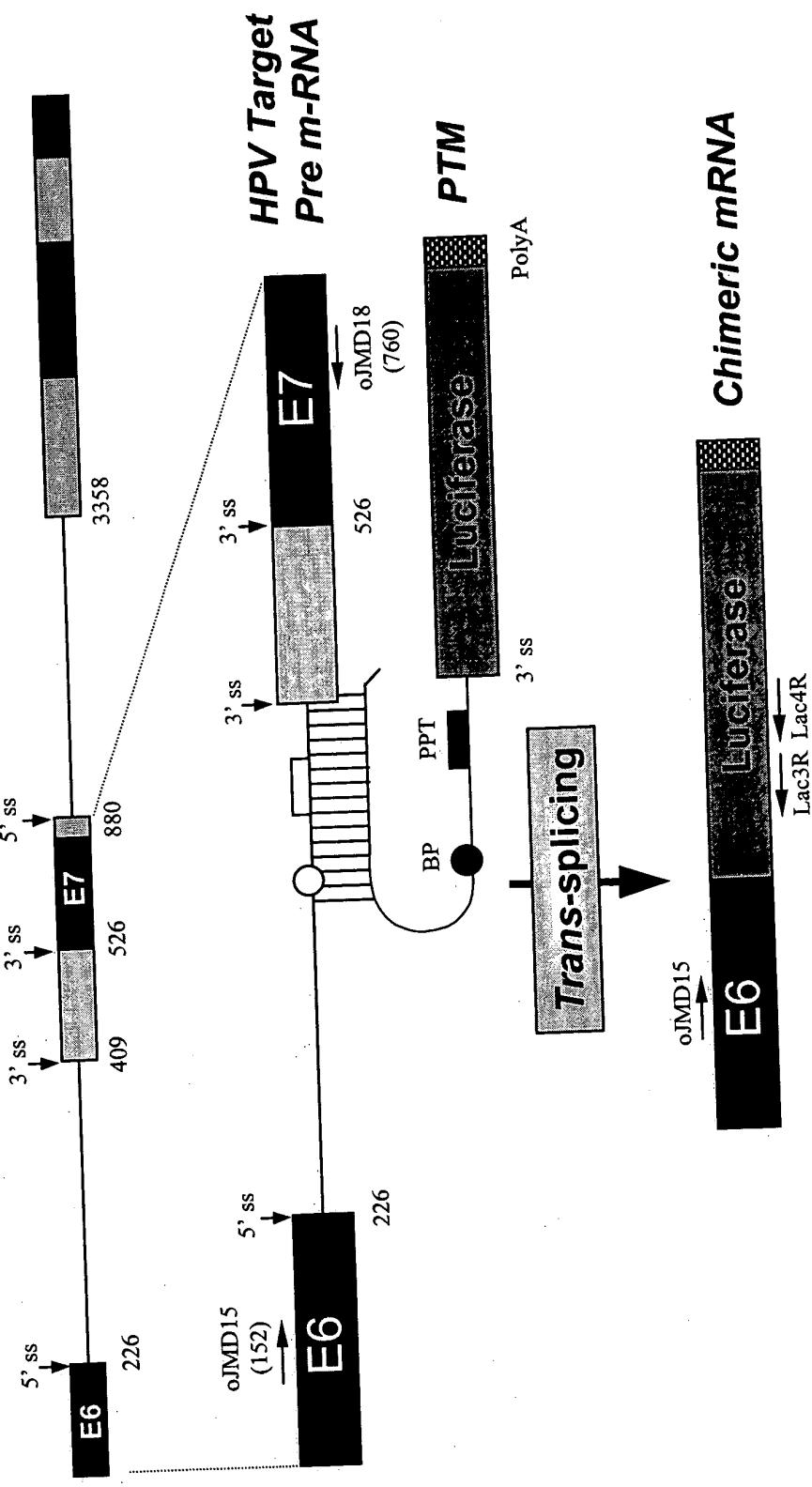


Figure 15

PB5003
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Strategy to Monitor the Expression of Human Papilloma Virus *Firefly Luciferase 3' exon replacement*



JMD15+Lac4R = 565 bp
JMD15 + Lac3R= 398 bp

Figure 16

luciferase data (with and without target).

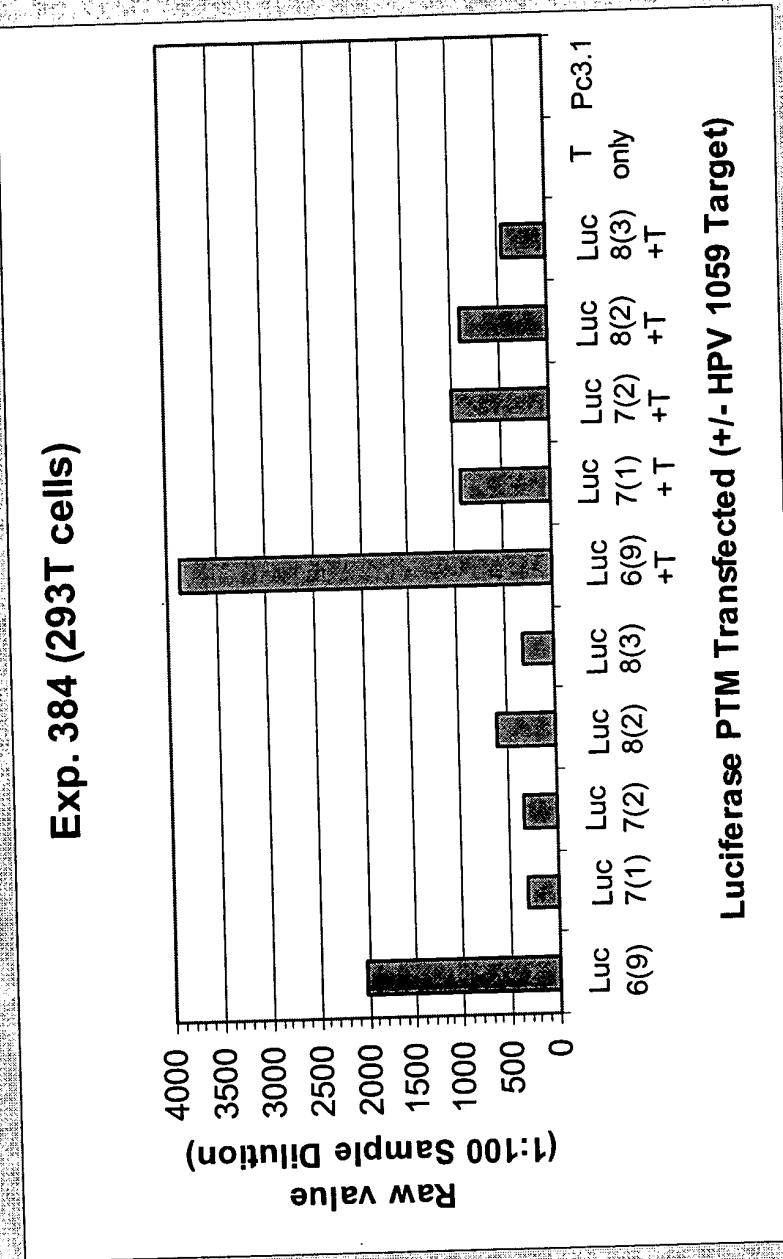


Figure 17

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Schematic of *Renilla Luciferase* pre-trans-splicing molecule (PTM)

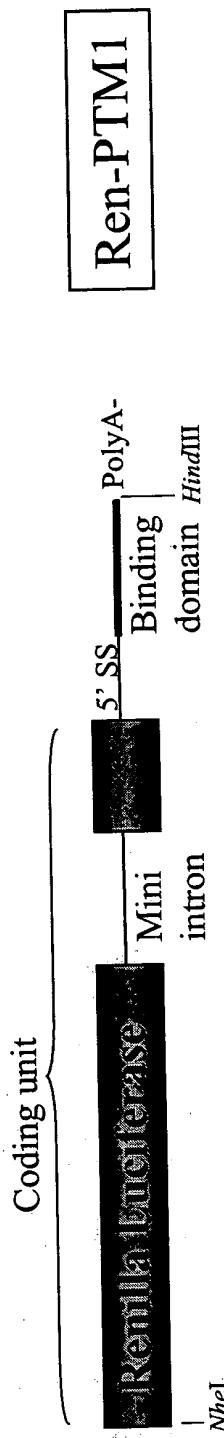
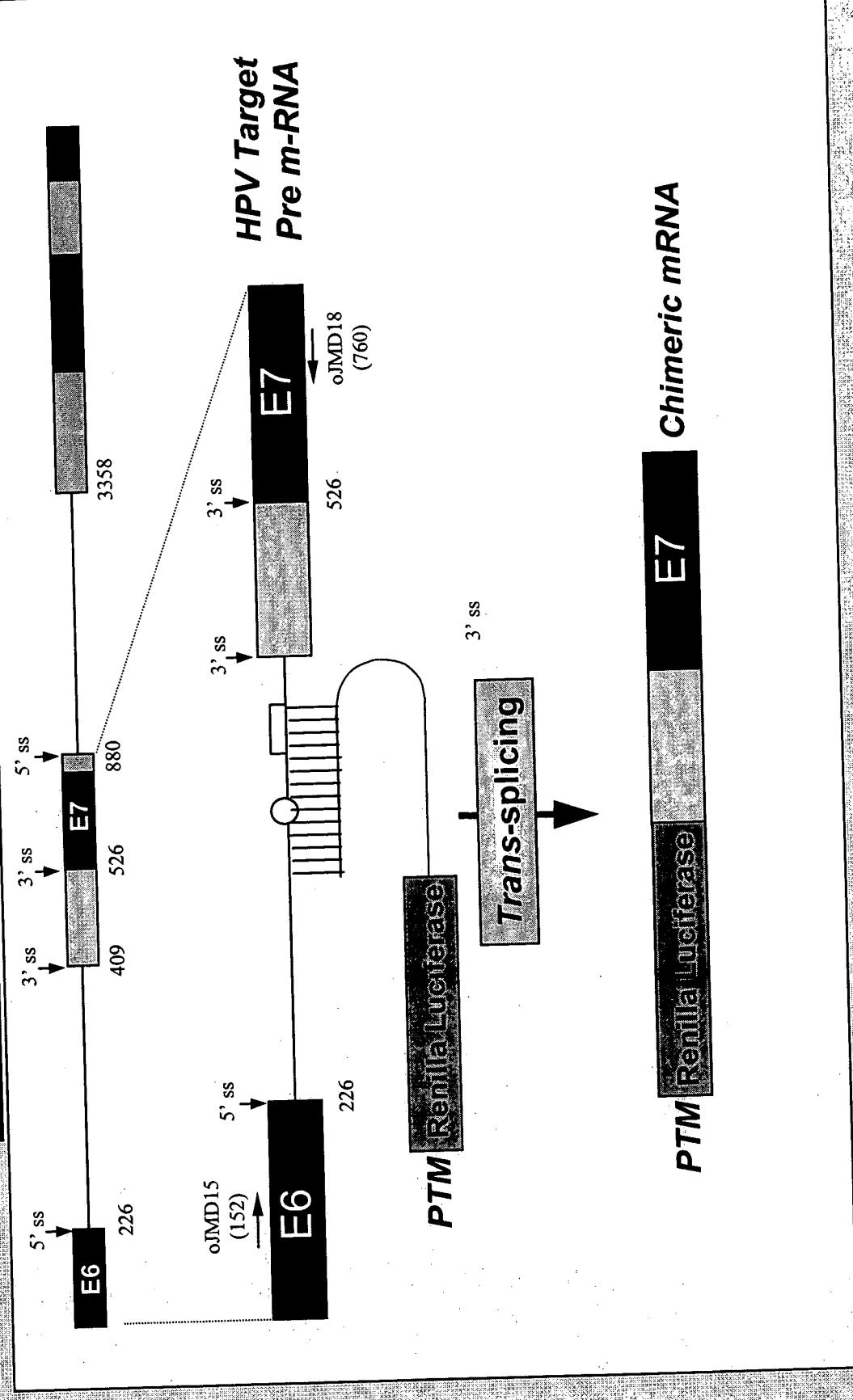


Figure 18

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(Sheet 21 of 31)

Figure 19
SiMaRT Strategy to Monitor the
Expression of Human Papilloma Virus
Renilla 5' exon replacement



Hemi-reporter Model Targets and PTMs

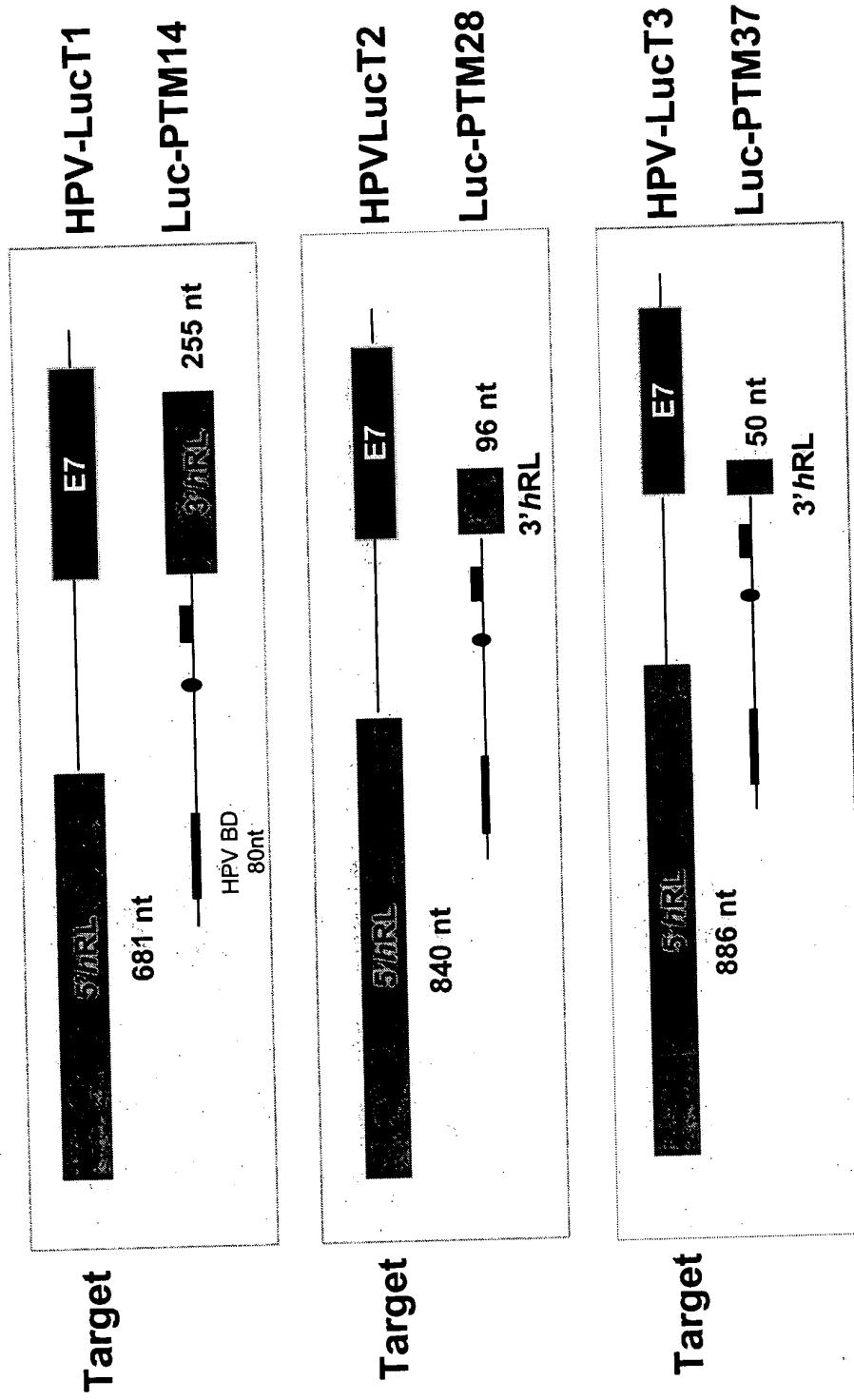
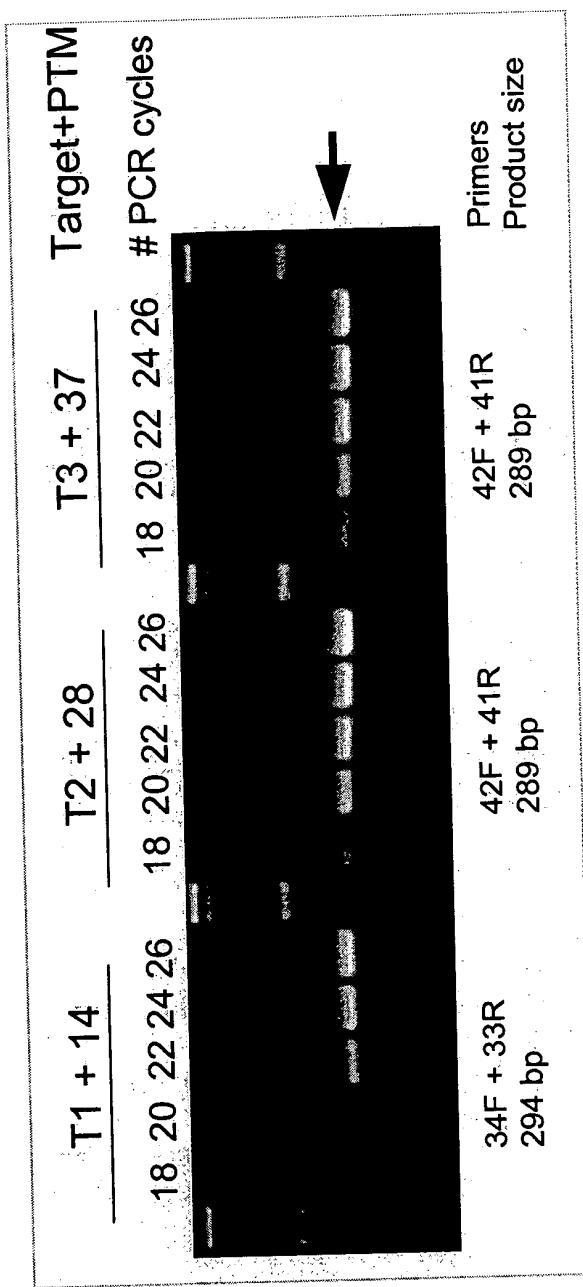


Figure 20

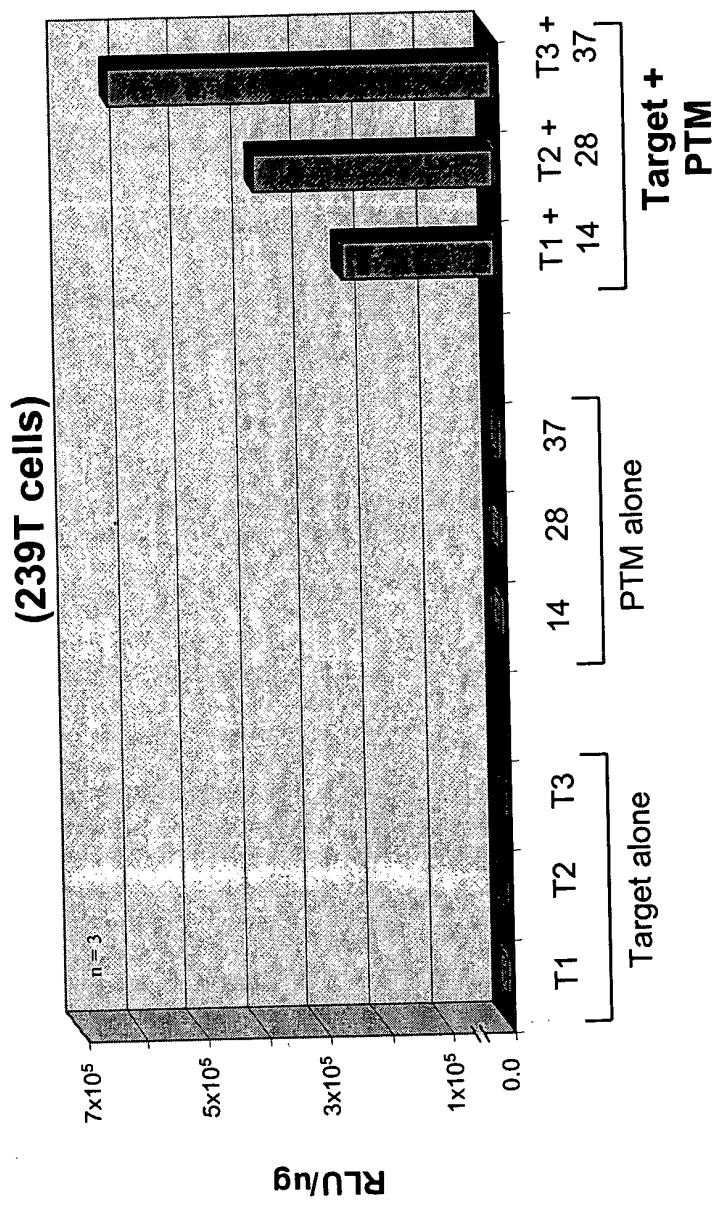
Trans-splicing efficiency at the RNA level
 (semi-quantitative RT-PCR)



INTRON

Figure 21

Efficient & accurate *trans*-splicing restores luciferase function in 293T cells



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Figure 22

Imaging of gene expression using full-length reporter PTM

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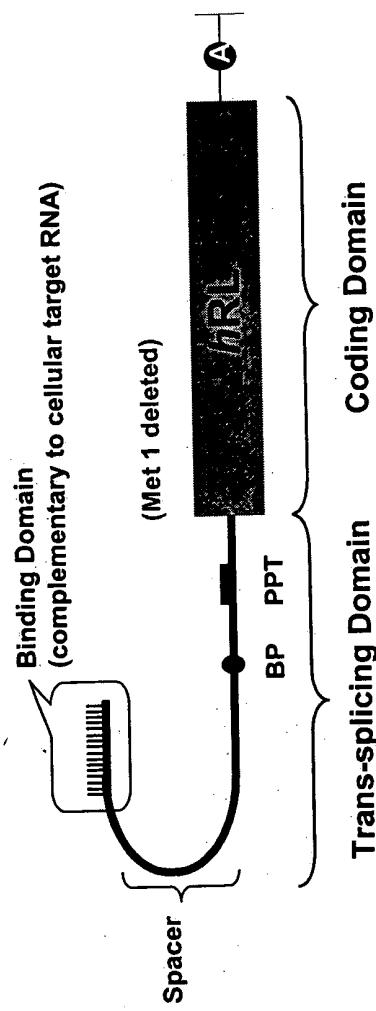


Figure 23A

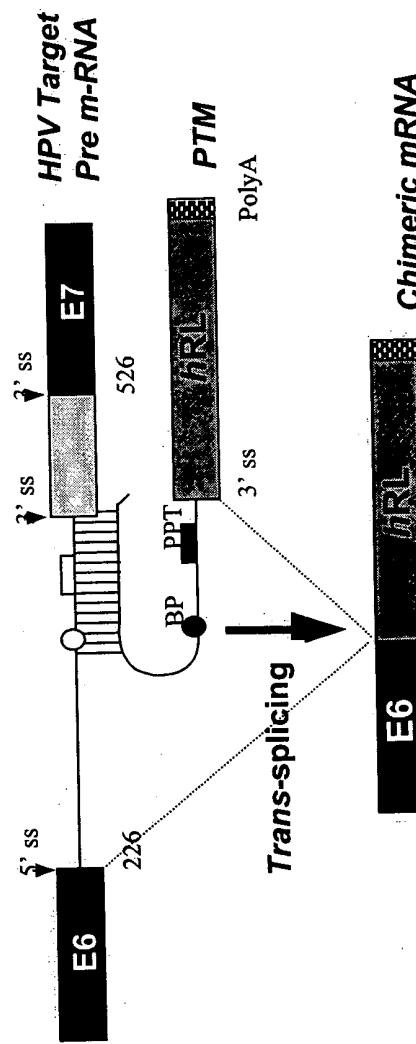


Figure 23B

Trans-splicing mediated mRNA repair and restoration of *hRenilla Luciferase* activity in 293T cells

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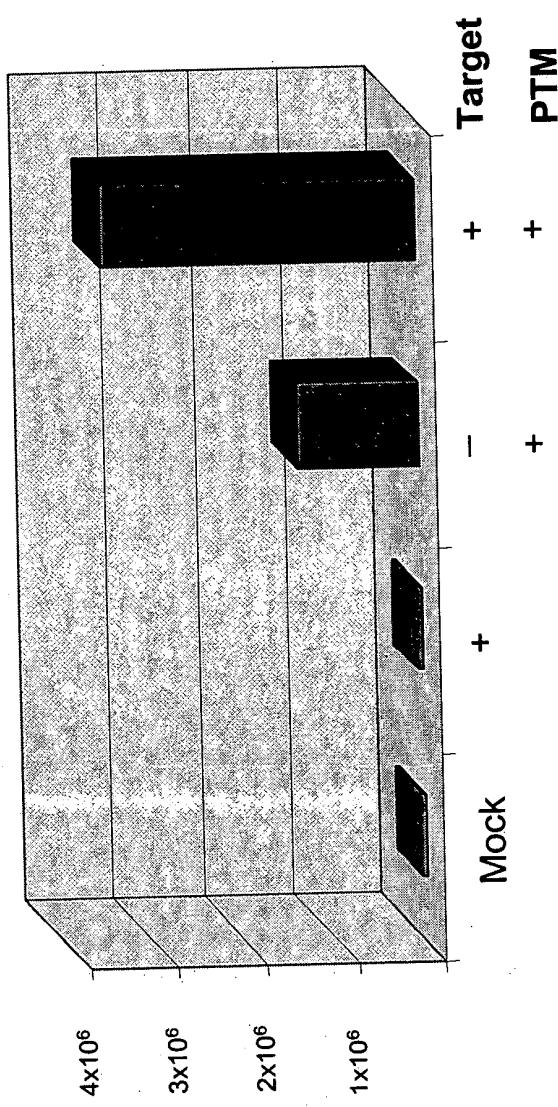


Figure 24

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Structure of a full-length imaging PTM (Luc-PTM38)

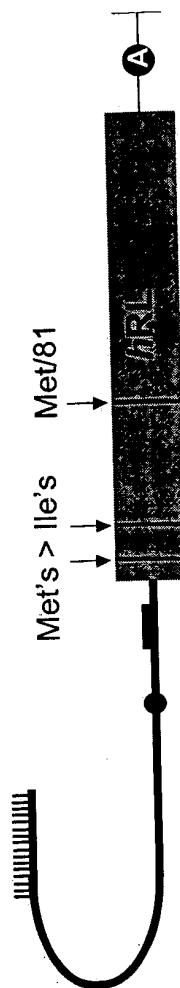


Figure 25A

INTRONN

Luciferase mutant PTM

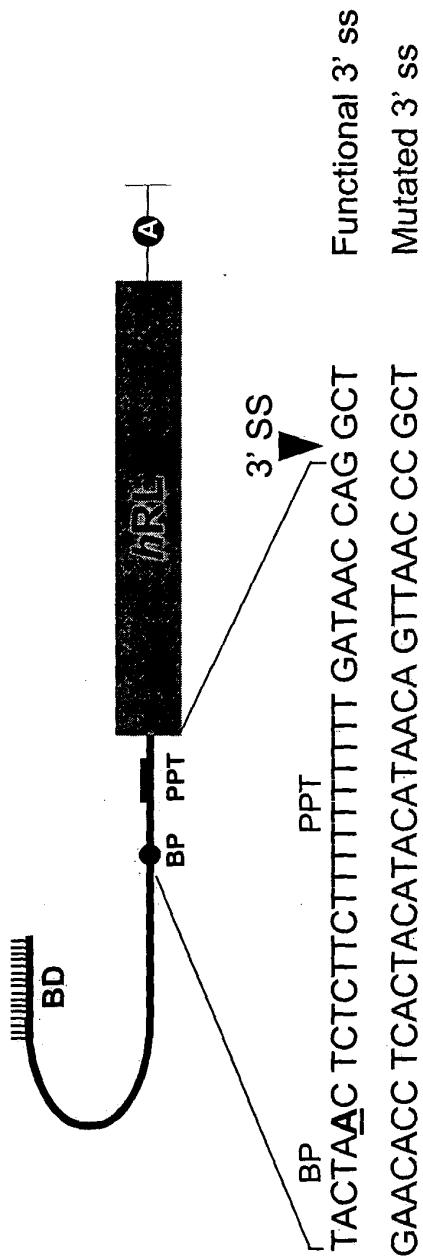


Figure 25B

INTRONN

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Luciferase Mutant PTMs

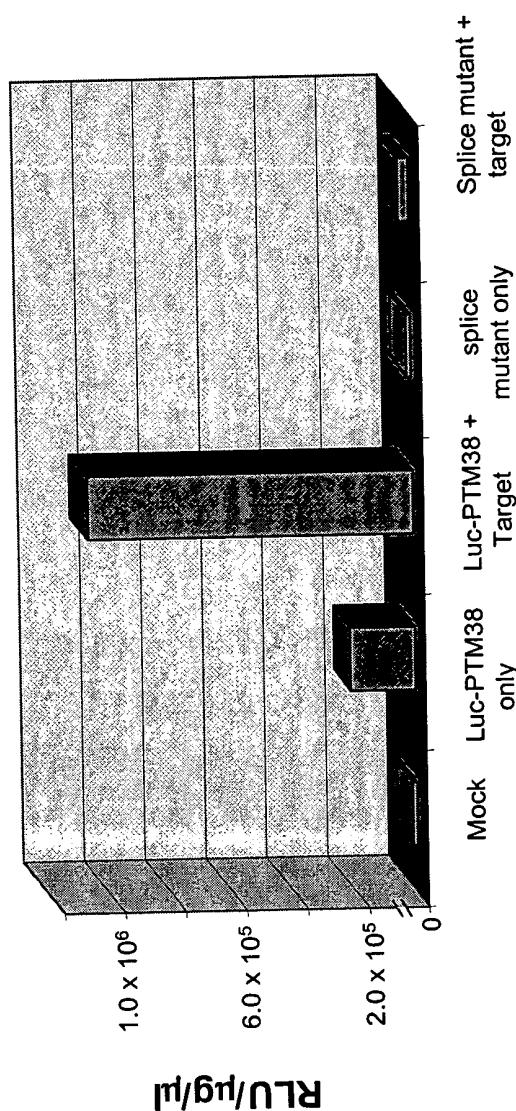
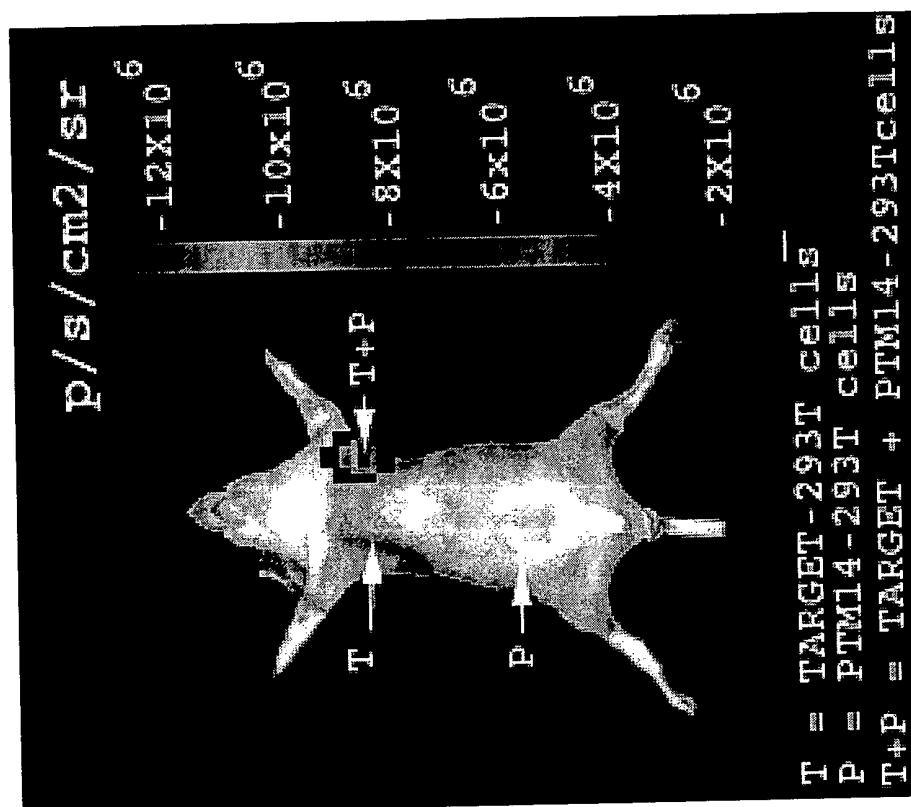


Figure 26

Imaging Gene Expression (*In vivo*)

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Targ t + PTM used for the above study

Figure 27

INTRONN

Imaging Gene Expression In Vivo following IV PTM delivery

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HPV-LucT1
+
Luc-PTM14

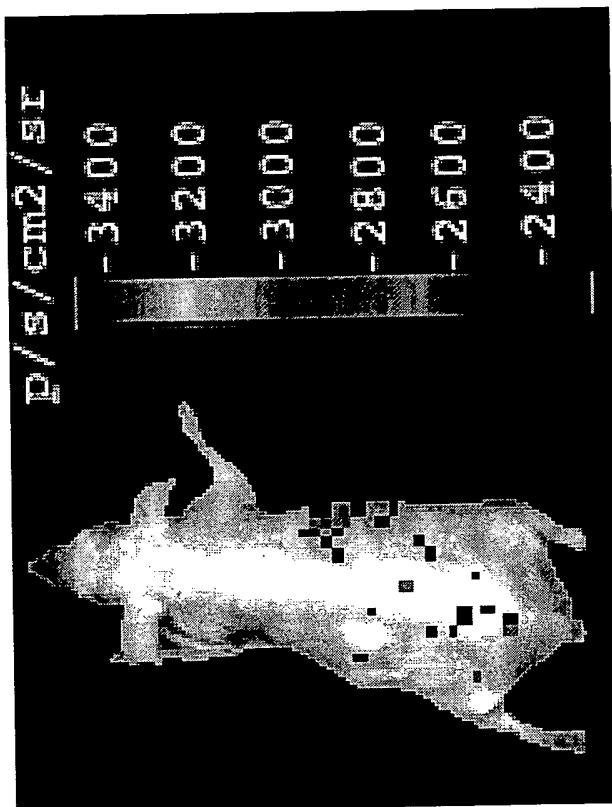


Figure 28